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THE J... BRARY 1941

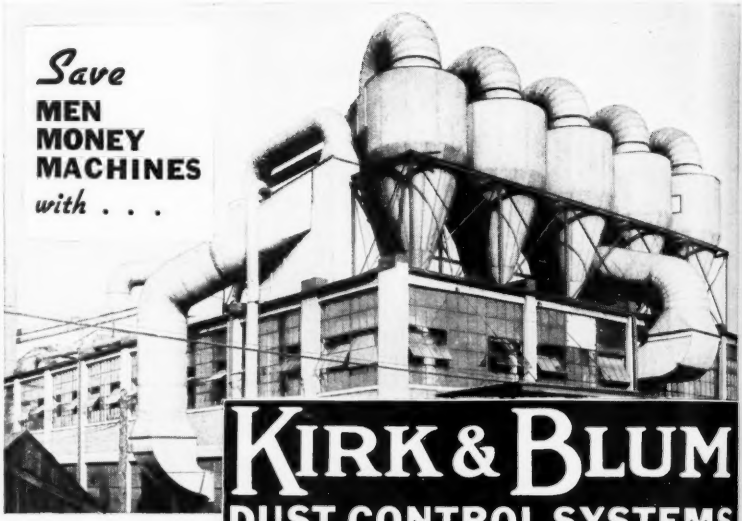
# OCCUPATIONAL *Hazards*

FEBRUARY
1941

- Ceramic Industry can Control the Dust
- What's the Accident Cost for Small Mines?
- Drink Water Right
- Health Activities Pay Out
- Background for Good Safety Program

THE ONLY MANAGEMENT PUBLICATION DEVOTED EXCLUSIVELY TO THE ENGINEERING CONTROL OF:

Dusts · Fumes · Vapors · Gases · Organic Solvents · Dermatitis · Industrial Sanitation · Industrial Health & Safety




*Air from the cyclone outlets is passed through Airmat Filters and returned to building, saving much heat.*

AT THE Detroit factory illustrated above, approximately 100,000 cubic feet of air is exhausted from the workrooms each minute. The problem that KIRK & BLUM Engineers were called upon to solve was the removal of dust from this large volume of air so the air could be returned into the building, thus reclaiming the heat and eliminating the neighborhood dust nuisance and the partial vacuum created within the building.

According to the company's president: "The KIRK & BLUM System saved $2,128.49 in one winter's heating cost, and raised the workroom temperature from 35° to 65° in extreme weather."

Regardless of your Dust Control and Fume Exhaust Problems—big or small—come to KIRK & BLUM. KIRK & BLUM Engineers—backed by over a third century specialized experience—design, build and install Systems to meet individual requirements. Every Kirk & Blum installation is covered by a written performance guarantee. Details mailed upon request.

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# Foot Safety NOW comes PACKAGED for Plants in 347 Towns and Cities

Now as never before it is management's duty to safeguard manpower for greater production. Start at the bottom—foot protection is basic. But don't divert your energies with needless problems—about what brand of Safety Shoes to choose, how to stock them in your plant, how to fit them, and "sell" your men on them. Let Thom McAn give you PACKAGED Foot Safety. Say the word and it's yours—without cost.

**Here is what PACKAGED Foot Safety means:**

**1.** We stock Safety Shoes for your plant in our Thom McAn shoe stores—without cost or obligation to you.

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**3.** We please your men (an important point these days) with Safety Shoes that look better, feel better, cost less than most brands.

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AMERICA'S LARGEST SHOE RETAILING SPECIALIST • 50 MILLION PAIRS SOLD SINCE 1935 ALONE

# Useful Free Literature

The literature briefly described in this department gives important information on products and equipment designed to control occupational hazards. Manufacturers' technical executives tell of the features to be found in their goods. Be sure to get all available data through this literature before buying. Note those items desired on coupon below and mail. See pages 24, 25 and 26 for New Ideas.

375—**FATIGUE REDUCING CHAIRS—ROYAL METAL MFG. CO.**—Specifications, prices, and photographs of the many industrial chairs and stools manufactured by this Company are contained in a 32 page book. The information is complete and develops numerous answers for the chair problem.

376—**STEAM UNIT HEATER—AUTOVENT FAN & BLOWER COMPANY**—Bulletin #103 gives capacity table, piping details and list of representative users of Autovent's unit heaters.

377—**SAFETY EQUIPMENT CATALOG—E. D. BULLARD CO.**—Photographs and descriptions of personal protective equipment and other apparatus to encourage safety practices are outlined in a new catalog issued by this Company.

378—**FAN SYSTEMS—KIRK & BLUM CO.**—Attractive booklet includes a description of the design and construction of Kirk & Blum systems, points out the special power saving features obtainable in their installations, and photographs of already completed systems in representative plants.

379—**PROTECTIVE HATS, FOOT GUARDS, SAFETY BELTS—THE STRAUSS CO.**—10 pages are devoted to a complete cataloging of the safety appliances manufactured by Strauss. The booklet is indexed and liberally illustrated.

380—**STAMPING PRESSES—JUNKIN SAFETY APPLIANCE CO.**—16 page booklet contains information on maintenance and safe operation of stamping presses.

381—**CONVEYOR BELT—B. F. GOODRICH CO.**—Graphically illustrated, both with pictures showing construction details and varied types of operation, this 12 page booklet discusses the many pertinent points in conveyor belt operation.

382—**SLIP-PROOF COMPOUND—W. G. LEGGE CO.**—Pamphlet tells of the use of a liquid abrasive compound that produces anti-slip surfaces on floors, around machinery, platforms and landings.

383—**OVERHEAD MATERIALS HANDLING—CLEVELAND CRANE AND ENGINEERING CO.**—Booklet features a variety of grabs and handling devices for many kinds of materials. This booklet is well conceived.

384—**SKIN CLEANSER—WEST DISINFECTING CO.**—This Company has available current literature on their products designed to reduce industrial skin diseases.

FREE LITERATURE COUPON Clip out and paste on postcard or enclose in envelope. Mail to: OCCUPATIONAL HAZARDS, 812 Huron Road, Cleveland, Ohio.

Nos. of desired items .....

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City ..... State .....

FL-29

## Offers Industrial Hygiene Course

The prevention and control of occupational diseases in national defense industries through modern methods of industrial hygiene and industrial health education will be emphasized in a new advanced course in "Industrial Hygiene and Occupational Diseases" conducted during the spring term beginning February 3 by the New York University Center for Safety Education, it was announced by Dr. Herbert J. Stack, director of the Center.

Designed principally for engineers and inspectors of insurance and industrial companies, the course will meet for fifteen consecutive sessions Mondays from 6 to 8 P.M. in the ninth floor assembly room at 60 John Street. Edward R. Granniss, director of the industrial engineering division of the National Conservation Bureau, will be co-ordinator of the course, during which specialists in various phases of industrial hygiene and industrial health education will be guest lecturers.

### Specialists Lecturing

The following specialists will be among guest lecturers in the course: Dr. Leonard Greenburg, executive director, division of industrial hygiene, New York State Department of Labor; Dr. A. J. Lanza, assistant medical director Metropolitan Life Insurance Company; Dr. C. H. Watson, medical department, American Telephone and Telegraph Company; Henry D. Sayer, general manager, Compensation Insurance Rating Board; Myron A. Snell, supervising engineer, Hartford Accident and Indemnity Company, Warren A. Cook; director, division of Industrial hygiene and engineering research, Zurich General Accident and Liability Insurance Co., Ltd.

Among topics considered during the course will be the nature, incidence, and prevention of occupational diseases; factors affecting industrial health; exposures in industry; engineering-control methods in occupational-disease prevention; medical control and industrial health education.


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**NUISANCE DUSTS**

- DUPOR No. 1 Respirator has 9 sq. in. filtration area.
- Handy as a pair of glasses — Weighs less than 1 OUNCE.
- Not necessary to remove when talking, eating, etc.
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## Type BX

Equipped with Federal Specification Lenses.

*Cover-All Type*—doesn't interfere with prescription glasses.

*Close-Fitting*—fits forehead and cheeks snugly, barring light and sparks.

*Light*—comfortable. Balanced adjustment makes it easy to push shield up out of the way.

*Side Protection* afforded by large opaque fiber side pieces.

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*Write for circular, prices and name of nearest dealer.*

**JACKSON PRODUCTS, 15122 Mack Avenue, Detroit, Mich.**

When you buy eyeshields, specify "JACKSON"

There's Profit in Prevention

# OCCUPATIONAL Hazards

FEBRUARY 1941
VOLUME 3 NUMBER 5

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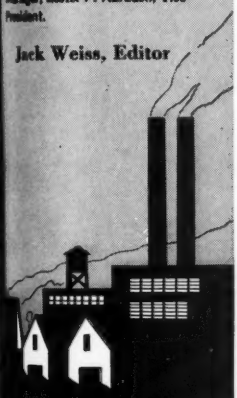
Jack Weiss, Editor



Circulation this issue more than 23,000 copies

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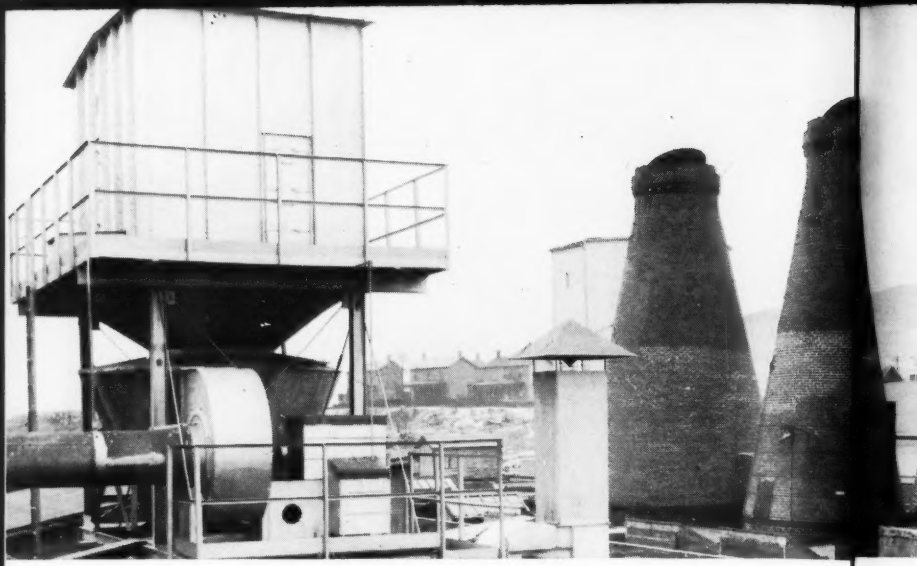

# CERAMIC WHITEWAR

## Industry Requires Rigid

# DUST CONTROL STANDA

L. M. MERRITT, SAFETY ENGINEER, DIVISION OF SAFE
HYGIENE, STATE OF OHI

IN THE four divisions of the ceramic industry which form the whiteware group, namely, china and tableware, floor and wall tile, electric insulators, and sanitary ware, the Ohio Industrial Commission allowed 42 silicosis claims in the period August 1, 1937, to October 1, 1940. During these 38 months, more than one person per month became disabled or died because of inhalation of harmful silicosis producing dusts. Twenty-one of these claims originated in china and tableware plants.

In the five floor and wall tile plants of Ohio, 17 claims have been allowed which indicates that a serious silicosis hazard exists in this branch of the ceramic industry. The electrical porcelain plants had four of the allowed claims. The three sanitary plants have not yet had a single claim allowed, but the potential hazard exists.

This article will attempt to indi-



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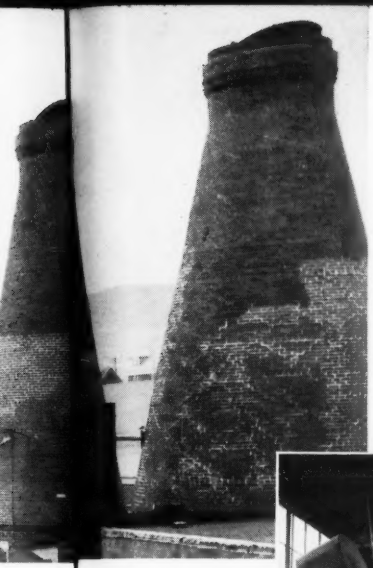
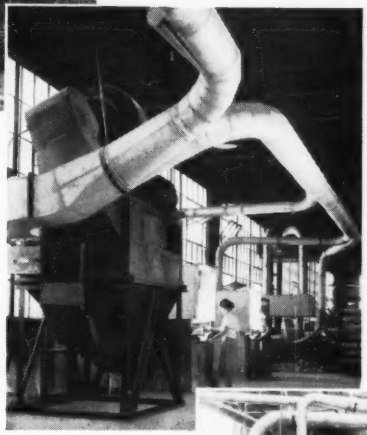


*In this thorough report on Ohio's extensive ceramic industry Mr. Merritt outlines hazardous operations. He recommends respiratory equipment, vacuum cleaning systems and skillfully engineered dust arresting apparatus "at the source."*

☆



*Dry porcelain and clay dusts are removed from this well-known Ceramic plant. Skillfully engineered exhaust piping leading to an arrester and a wet precipitator constitute the system. Photos courtesy Kirk & Blum Mfg. Co.*

# HITWARE

## uires Rigid

## STANDARDS

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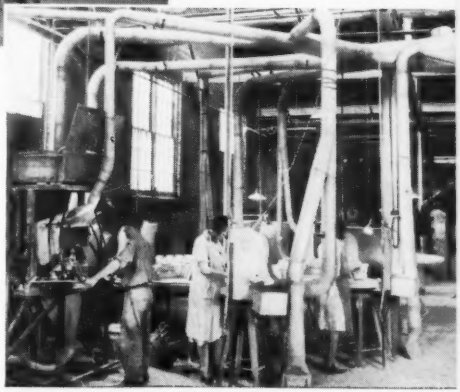
ATE OF OH



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cate the operations where hazardous dust is diffused into the atmosphere. And will recommend accepter controls.

**Preparation**

The normal whiteware body consists of a mixture of all or part of



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ROYAL
FACTORY
SEATING
Does a JOB!
The saddle - shaped seats and form-fitting backs of Royal adjustable chairs help reduce employee fatigue. Obviously, proper seating helps output. Write for the new Royal Factory Seating Catalog. There's a chair to suit any worker . . . to fit any job. Free trial to any progressive company.
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ROYAL SEATING PAYS FOR ITSELF

the following: several types of clay, feldspar, flint (quartz), talc and pyrophollite. Quartz may be found in several of these. The flint is practically all free silica. Some china clays contain small amounts of free silica, likewise does the feldspar and pyrophollite. Flint furnishes the largest source of silica. Whiteware body composition varies from 10% to 40% flint.

**Methods**

There are three methods of compounding the various ingredients of the clay body. The first and most widely used is the method of blunging, in which various components are transferred from bins to a weigh car and shovelled into a tank containing water which is being agitated thoroughly. After the materials are thoroughly disintegrated and mixed, the slip is drawn off through a screen to remove the coarser particles. The slip drains into a cistern where agitation is continued, and then pumped into the filter press where a portion of the water is removed.

The second and less used method of preparing the body is by ball-milling. In this case, the body materials are handled in about the same manner as described above, except that they are ground in a large cylindrical mill with flint pebbles or artificial balls until all of the material is reduced to the proper grain size. It is then screened, stored in the cistern, and filter-pressed as described.

The third and least used process is known as "dry mixing." The ingredients of the body are elevated into a pan type mixer in a skip hoist. Water is added and the body is tempered by mixing and passing under the heavy mullers. At this time the body is about in the same condition as produced at the filter press in the other processes, except that it contains less water.

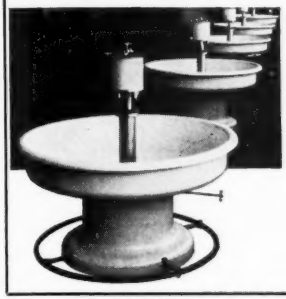
**Dusts**

Hazardous dusts are produced in all of these procedures only before the body is wetted. The body ingredients, previously noted, must be unloaded from railroad cars into storage bins. Then smaller amounts are weighed and mixed. The most hazardous ingredient is the flint. In most plants this is unloaded

**Adding Men?**

Then Enlarge Your Washroom Facilities With

BRADLEY WASHFOUNTAINS



Bradleys serve 8 to 10 persons simultaneously, yet insure maximum sanitation because running water is furnished each person from a central sprayhead. To install a 10-person Bradley Washfountain requires no more piping connections than a conventional *one-person basin*. About 25 per cent less floor space is required, and records of many plants using Bradley Washfountains show that water consumption is reduced an average of 70 per cent. 1941 Catalog now ready.

BRADLEY WASHFOUNTAIN CO.
2259 W. Michigan St., Milwaukee, Wis.


from covered box cars into the bins by wheel barrow. Many plants buy flint with 2% moisture; this helps prevent dust, but does not necessarily reduce the hazard to within safe limits. The moisture dries quickly from the surface of the pile and a dry powder, which must be handled, is produced. When unloading the flint, the workman shovels it into a wheel barrow. He then wheels it on a runway and dumps the contents of the barrow on the pile in the bin. Sometimes the flint falls six feet or more causing clouds of dust in the bin. The same also is true of the unloading of other materials, although the quartz ratio is much smaller in the clay, feldspar, etc.

**Wear Respirators**

Compounding the body is done universally by weighing the amounts of each ingredient into a weigh car or truck and charging it into the shaking or grinding equipment. Usually, this is done with the shovel. Often the body must be handled twice, at the pile, and at the mixer. Some plants have installed bins with conveyor bottoms to reduce the manual handling. This reduces the dust hazard. Also, these bins can be ventilated easily. In all cases, it is recommended that the bins or weigh car track be isolated from the filter press room by a dust tight wall. Every man working in the bin and weigh car area should wear a respirator at all times.

In the "dry mix" process, many of the ingredients are purchased in

*(Please turn to page 30)*

• *A precautionary measure in mines is roof testing before cross bars are set up. Photo courtesy U. S. Bureau of Mines.*

# $698,584 IS for

*By H. E. Hodgson, Saf Industrial Com ion of*

STATISTICS make the driest kind of material to read. However, they do furnish facts upon which intelligent and informed action can be taken.

In making this analysis of accidents and accident costs, I have used the 1939 experience of 110 small mines whose 1552 accidents have been reported to the industrial commission. Cards were made showing the vital information, principally for compensation purposes, with some additional information which can be used for prevention. The accuracy of this work, of course, depends on how accident reports are made out.

### Prevention Profitable

The old saying that "accidents don't just happen—they are caused," applies to small mines probably to a greater extent than to larger operations. When you stop to consider that costs such as replacement of the injured man, loss of time by others at the scene of the accident, loss of time due to slowing down of the crew after the accident, damage to equipment, consequent loss of production and other factors amount to approximately four times the combined compensation and medical paid, you will readily see that accident prevention is profitable.

### Cost—$698,584

The 110 companies considered had 1,552 accidents which cost in compensation $130,222, and in medical expense $44,424, a total of

\$174,646, or an average for each company of \$1,587. When we figure the total estimated cost of these accidents by multiplying by four, we get a total of \$698,584, and an average actual cost per company of 6,350, which amounts to an average of \$450 per accident. If accidents are prevented, then injuries are prevented, and from these costs it is readily seen that accident prevention is preferable to spending this amount of money yearly.

**Causes**

It has been pointed out in industrial accident prevention work that a large percentage of all occupational accidents are preventable. Analysis shows that there are two possibilities under which the causes of all accidents may be classified: namely, "An unsafe act on the part of the injured" and second "Unsafe working conditions or equipment." With few exceptions one or both of these conditions will be found in the investigation of every accident. To make sure that neither of these conditions exists is the responsibility of those in charge of the work. Frequent accidents are being looked on more and more as being due to lack of supervision and failure to do things necessary for their prevention, whether that consists of correcting some physical or material hazard, or giving the employee proper instruction and training along safety lines.

These 110 companies had the experience outlined below.

**Charges**

Rather than give complete data with regard to causes, types of accidents, nature and location of injuries, only those which are happening most frequently and are the most severe are listed.

Taking "causes" or "agencies" first, we find that:

"Machinery" is charged with 218 accidents which cost \$28,992 in compensation and medical.

"Hand tools" resulted in 101, costing \$5,169.

"Hand cars and trains" caused 72 and cost \$21,094.

Under "types of accidents," there is the following:

"Blow from falling object," more commonly known as "fall of Rock," of which practically all of these consist, accounted for 472 injuries at a cost of \$54,771 for compensa-

| | No. | Medica | Compensation | Days Lost | Months Awarded |
|---|---|---|---|---|---|
| Fatals | 6 | \$ 421 | \$ 41108 | — | 1882 |
| Permanent Totals | 20 | 812 | 2020 | | 32 |
| Permanent Partials | 56 | 12588 | 49000 | 5840 | 2750 |
| Temporary Total | 288 | 14386 | 21674 | 8331 | — |
| No compensation Paid | 1175 | 12746 | — | 677 | — |
| Estimated | 7 | 3471 | 16420 | 731 | — |
| | 1552 | \$44424 | \$130222 | 15579 | 4664 |

# 4. IS CIDENT BILL for 10 Small Mines

*Hodgson, ef Safety Engineer, strial Com ion of Arizona*

*CAUSE & TYPE*

| | Cases | | Medical | | Compensation | | Total C. & M. | | Days List | | Months Awarded | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | Amt. | % | Amt. | % | Amt. | % | No. | % | No. | % |
| Falls | 107 | 6.9 | $ 3404 | 7.7 | $ 6264 | 4.8 | $ 9668 | 5.5 | 1753 | 11.2 | 30 | .6 |
| Blow from Fall Ob. | 472 | 30.4 | 12520 | 28.2 | 54771 | 42.1 | 67291 | 38.5 | 5315 | 34.1 | 1503 | 32.2 |
| Crushing | 99 | 6.4 | 5294 | 11.9 | 14136 | 10.6 | 19430 | 11.1 | 1955 | 12.6 | 1205 | 25.9 |
| Slip | 86 | 5.5 | 3264 | 7.4 | 5893 | 4.5 | 9157 | 5.2 | 1634 | 10.5 | 771 | 16.5 |
| Chemicals | 37 | 2.4 | 483 | 1.1 | — | — | 483 | .3 | 16 | .1 | — | — |
| Striking & Step. on | 96 | 6.2 | 1220 | 2.8 | 341 | .3 | 1561 | .9 | 175 | 1.1 | — | — |
| Flying Objects | 212 | 13.7 | 3088 | 6.8 | 4471 | 3.4 | 7559 | 4.3 | 340 | 2.2 | 49 | 1.1 |
| Machinery | 218 | 14.1 | 7092 | 15.8 | 21900 | 16.8 | 28992 | 16.6 | 2302 | 14.8 | 446 | 9.6 |
| Hand Tools | 101 | 6.5 | 2442 | 5.5 | 2727 | 2.1 | 5169 | 3.0 | 928 | 6.0 | 158 | 3.4 |
| Vehicles | 2 | .1 | 22 | .1 | 17 | .3 | 39 | .1 | 16 | .1 | — | — |
| Trains & Cars | 72 | 4.6 | 3755 | 8.5 | 17339 | 13.3 | 21094 | 12.1 | 579 | 3.7 | 486 | 10.4 |
| Hot Substances | 25 | 1.6 | 473 | 1.1 | 114 | .1 | 587 | .3 | 67 | .4 | — | — |
| Animals | 5 | .3 | 479 | 1.1 | 953 | .7 | 1432 | .8 | 242 | 1.6 | 5 | .1 |
| Explosives | 17 | 1.1 | 505 | 1.1 | 316 | .2 | 821 | .5 | 123 | .8 | 1 | — |
| Electricity | 3 | .2 | 383 | .9 | 980 | .8 | 1363 | .8 | 134 | .8 | 10 | .2 |
| Totals | 1552 | 100.0 | $44424 | 100.0 | $130222 | 100.0 | $174646 | 100.0 | 15579 | 100.0 | 4664 | 100.0 |

tion, and $12,520 for medical expense. This totals $67,291 and is by far the heaviest both in frequency and cost.

"Flying objects" follows with 212, and though second in frequency is down in seventh place in cost. This is the classification under which a great number of eye injuries occur. "Falls" were in third place with a total of 107 and a cost of $9,668, combined compensation and medical.

Under "nature of injury," lacerations, contusions, and abrasions were first with a total of 472 and second in cost with $32,821.

"Foreign bodies," either in the eye or other parts was second with 271, but sixth in point of cost with a total of $11,216.

*NATURE OF INJURY*

| | Cases | | Medical | | Compensation | | Total C.&M. | | Days Lost | | Months Awarded | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | Amt. | % | Amt. | % | Amt. | % | No. | % | No. | % |
| Burn | 60 | 3.9 | $ 1566 | 3.5 | $ 1316 | 1.0 | $ 2882 | 1.7 | 285 | 1.8 | 11 | .2 |
| Concussion | 5 | .3 | 946 | 2.1 | 13232 | 10.2 | 14178 | 8.1 | 330 | 2.1 | 918 | 19.7 |
| Amputation | 8 | .5 | 560 | 1.3 | 4085 | 3.1 | 4645 | 2.7 | 357 | 2.3 | 52 | 1.1 |
| Dislocation | 9 | .6 | 1089 | 2.5 | 2500 | 1.9 | 3589 | 2.0 | 319 | 2.1 | 26 | .6 |
| Fracture | 84 | 5.4 | 8451 | 19.0 | 62021 | 47.6 | 70472 | 40.4 | 5559 | 35.7 | 2390 | 51.2 |
| Strains & Sprains | 130 | 8.4 | 4214 | 9.5 | 7738 | 5.9 | 11952 | 6.8 | 2032 | 13.0 | 776 | 16.6 |
| Foreign Body | 271 | 17.5 | 4707 | 10.6 | 6509 | 5.0 | 11216 | 6.4 | 612 | 3.9 | 69 | 1.5 |
| N. O. C. | 41 | 2.6 | 1656 | 3.7 | 8069 | 6.2 | 9725 | 5.6 | 212 | 1.4 | 338 | 7.3 |
| Cuts & Bruises | 927 | 59.7 | 17700 | 39.8 | 15121 | 11.6 | 32821 | 18.8 | 4989 | 32.0 | 41 | .9 |
| Surgical Amputa. | 9 | .6 | 2523 | 5.7 | 8807 | 6.8 | 11330 | 6.5 | 453 | 2.9 | 43 | .9 |
| Hernia | 8 | .5 | 1012 | 2.3 | 824 | .7 | 1836 | 1.0 | 431 | 2.8 | — | — |
| Totals | 1552 | 100.0 | $44424 | 100.0 | $130222 | 100.0 | $174646 | 100.0 | 15579 | 100.0 | 4664 | 100.0 |

"Strains and sprains" were in third place and accounted for 130 with a cost of $11,952. In point of cost "fractures" were first with compensation paid of $62,021 and medical expense of $8,451, a total of $70,474.

Eyes, second, with 317 or 20.43%

*(Please turn to page 22)*

# *DRINK...* TO YOUR *HEALTH*

☆

***Industrial Workers Need Water. Paper Cups, Accessible Water Dispensing Equipment Help the Drinking Habit***

☆

***Salt Tablets help the drinking habit. (Photo courtesy International Salt Co.)***

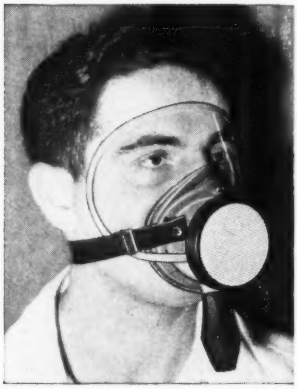
INDUSTRY has spent millions of dollars on accident prevention, and not until recently has the problem of absenteeism due to illness been reckoned with. Yet such a simple item as a paper cup may minimize the $250,000,000 loss which industry encounters every year because men have been temporarily disabled by common colds and other respiratory infections.

Today, with increased production in war industries and the consequent strain on workers, the question of preventing sick absenteeism, through such hygienic measures as the required use of the paper cup, becomes of paramount significance. The need was highlighted and emphasized recently by Thomas G. Parran, M.D., Surgeon General of the United States Public Health Service, who declared.

"The expansion of war industries will bring acute health problems. Many new industrial hazards appear and familiar ones are intensified. Records show the need of extended industrial-hygiene measures to control and prevent health hazards. It is wasteful for industry to train a highly skilled employee over long months, only to have him break down suddenly with tuberculosis or some other crippling condition. Our industrial machines are the most efficient in the world. The men and women who man the machines must have a comparable efficiency."

Common colds, sore throat, bronchitis, influenza, pneumonia, tuberculosis—all these illnesses proved, in the last war, to be major threats and unless steps are taken to curb their spread, may again

# *Pulmosan* EYESHIELD RESPIRATORS



**EXTRA PROTECTION FOR THE EYES in Dusts, Particles, Fumes, Sprays, Splashes**

Originated by Pulmosan engineers, Eyeshield Respirators are making a big hit thruout industry. The Eyeshields are of strong, clear plastic, weighing only ½ ounce. They arch over respirator and fasten with headband snaps. Easily removed for cleaning or replacement. Full, unobstructed vision. Will not flap, twist or bend. Available in many Respirator models. Get details.

Write for Detailed Folder

**Exclusive Pulmosan Features**

1. Edges of Eyeshields bound with Felt, to prevent scratching the face.
2. Eyeshields fit closely to face; no twisting or bending; non-fogging, almost airtight.

**Pulmosan Safety Equipment Corp.**

Dept. OH, 176 Johnson St., Brooklyn, N.Y.


seriously impair industrial competency and hamper national defense. These diseases may be contracted through "hand to mouth infection, or through the use of cups, spoons, and other things that are mouthed," according to eminent health authorities. The common drinking cup, therefore, looms as an obvious source of infection and provides the first objective in plans of industry to insure workers against physical breakdowns.

**Sick Absenteeism Problem**

First, however, let us see just how important is this problem of sick absenteeism. Is it worth fighting? Industry, only recently, has given it much consideration. Various records kept by industries for the past two decades were turned over to the United States Public Health Service, which sifted them and produced a series of startling figures. Sick absenteeism, health officials found, is five times more prevalent than absenteeism due to accidents. It presents industry, every year, with a $1,176,000,000 bill, in wage losses. Other costs, as yet undetermined in dollars and cents, must be included in the grand total. These embrace such items as the cost of getting a replacement and of training him; the chance of spoilage of material; and the entire expense of labor turnover, including unemployment insurance. At one time the cost of hiring a new employee was estimated at $20 to $25. Allowance should also be made for the lessened efficiency of workers who continue their labors though suffering from an illness.

The more spectacular disabilities, arising out of conditions of work, "form a very small portion of the whole," investigators found. The greater percentage of absences are of short duration—from two to eight days—and they are principally due to such prosaic afflictions as bronchitis, colds and other diseases of the larynx, pharynx, and tonsils. Influenza which, once on the rampage, may take a large toll of victims is not even included in this group.

One and a half days is the average time which a worker will take from his factory, because of these diseases, during a year's time—representing about a $6 wage loss for every worker in the country. Because these are the diseases which respond most readily to precautionary measures and because they are often the first to skyrocket when the resistance of workers is lowered, their prevention is worth serious study.

About thirty years ago an aroused population outlawed, through its state legislatures, the common drinking cup because it was recognizedly an important instrument in the transmission of disease. Yet W. W. Bauer, M.D., Director of the Bureau of Health and Public Information of the American Medical Association, was able to declare not long ago, "Nobody believes in common drinking cups, but thousands of people use them." Laws prohibiting the use of the common drinking cup in public places exist in forty-five states but they, he protested, are not enforced.

**Startling Investigation**

The opinion, held by all health authorities, that the common drinking cup is a menace has been substantiated whenever a controlled experiment has been possible. During the last war, when the influenza epidemic was at its height, an investigation was made by members of the Army Medical Corps. One group of soldiers sloshed their mess kits in a tub of dirty lukewarm water. The other ate with utensils that had been boiled. Of 32,624 soldiers who doused their dishes in a common tub, twenty-five per cent came down with flu; of 33,452 who ate from boiled dishes, only five percent got the disease.

CONTROL GERMS!
Use "BURNITOL" CUSPIDORS
PROTECT workers health. Remove disease producing germs by using Burnitol Cuspidors. Burnitol Cuspidors are waterproof, wire stitched. They cost only a fraction of one cent and are used by leading manufacturers everywhere.
Send for a trial order today
BURNITOL MFG. CO.
SANITARY PAPER SPECIALTIES
33 SULLIVAN SQUARE
BOSTON, MASS.
SAN FRANCISCO
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CHICAGO
1165
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ST.

**HER DRINK of WATER**

**CAN SLOW YOUR PRODUCTION INCREASE YOUR COSTS!**

Influenza, colds and other communicable diseases cost American industry *billions* yearly. Don't let preventable illness or epidemics cripple your production, rob you of profits!

U. S. Gov't Dep't of Labor Bulletin No. 87 proves that all diseases which can be contracted through the mouth MAY BE SPREAD BY USE OF THE "DEADLY" COMMON DRINKING GLASS OR THE EQUALLY GERM-LADEN BUBBLER DRINKING FOUNTAIN, which so many mistakenly think is a sanitary device.

Play safe with Health and Profits—use SUNSHINE or HYGEIA sanitary paper drinking cups. Highest medical authorities prove that the saving in payroll dollars far exceeds their cost. Handsome wall dispensers for both types.

*Write us for samples and vital facts about protecting your plant against communicable disease.*

**HERZ CUP COMPANY**
Division of Herz Manufacturing Corporation
Dept. OH. 840 East 134th St., New York City

Under less rigidly supervised conditions, the difficulty of singling out any one factor as the sole cause of disease is apparent. But on the basis of circumstantial evidence, the unwashed drinking glass would certainly be convicted as an accomplice, if not as the chief agent in the spread of disease. Bacteriologists, examining glasses and utensils used in public eating places have, on innumerable occasions, counted from 100,000 to 1,000,000 bacteria on the rim of a single drinking glass. State health inspectors at Montgomery, Alabama, once identified all bacteria found on a glass and discovered that forty per cent were disease producing.

Not long ago an innovation was tried on a construction crew, which was working for an oil company in Colombia. Paper cups were provided along the line and beside drinking fountains and men were required to use them, disposing of each cup after use. Veteran crews snickered at the precautions but after six months they stopped laughing. The crew of six hundred men which was using paper cups presented an unexcelled health record. There were very few common colds among the men and no other respiratory diseases. Paper cups were thought to be largely responsible for the decrease in illness.

Though trench mouth is not generally regarded as a serious disease, it often produces fever, headache, and results in temporary disablement. The incidence of this disease has, on many occasions, been associated with the common drinking cup. On a construction job recently six cases of this malady were attributed to the fact that men had used a common drinking bucket and dipper.

The principles of sanitation in industry, according to R. R. Jones, M.D., Surgeon of the National Institute of Health, United States Public Health Service, are essentially the same as those which are practised in the community. (It is estimated there are at least 300,000,000 colds in the United States every year.) "The common

*(Please turn to page 29)*

## Here's how even mild heat ruins LEATHER soles:

**PHOTOGRAPH FROM U. S. DEPARTMENT OF AGRICULTURE** Bulletin 1168 shows how leather soles exposed to little more heat than the hand can bear, are fused, cracked and completely ruined. These soles are unsafe . . . will wear through in a short time. And soles wet from snow or rain will burn even more quickly.

# LEHIGH HOT MILL SAFETY SHOE

•

**SOLES AND HEELS** made of multiple layers of cord-in-composition (built like an auto tire). Will withstand heat that burns and cracks leather soles quickly.

**ARMORPLATE STEEL TOE BOX** protects toes from injury.

**Black elk blucher, 5-iron oak leather middlesole, 5 ply cord-in composition outersole and 11 ply cord-in-composition heel with oak leather base. Comfortable, extra wide backstay, full leather lining, two brass rivets shank to sole, genuine Goodyear Welt construction. Width E, sizes 5 to 13.**

WRITE TODAY FOR FULL DETAILS AND PRICES, TO

**LEHIGH SAFETY SHOE CO.** ALLENTOWN, PA.

## FRONT LINE DEFENSE OF THE FACE AND EYES

#10 "Alert"—protection from dust and glare.

#30 "Defender"—available in a combination of windows, Plastacele, Fibre and Wire Screen

#66—Gimp-bound window, light, cool, low-priced.

THE BOYER CAMPBELL COMPANY
6547 Antoine St. Detroit, Michigan


## Cuts Lost Time Due to Colds

Recent surveys made by the U. S. Public Health Service, industrial physicians, and insurance companies indicate that an average of over 50 per cent of the time lost from work is due to colds and their complications. At the Quaker Oats Company, St. Joseph, Mo., it has been found that this lost time can be cut more than 70 per cent through use of oral vaccines.

Forty workers comprised an experimental group. The medication used in the work was an improved vaccine prepared in the form of small, white tablets for administration by mouth. Total cost of the material for the experiment was 66 cents per individual.

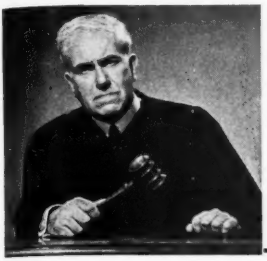
The average number of colds during the previous season had been 4.85. During the winter following immunization, the average number of colds in the experimental group was 1.45—a decrease of 70.2 per cent.

While definite reactions following oral immunization for the common cold may be expected, such reactions are decidedly less severe than those resulting from the injection treatment.

## Safety Shoes

There was a time when it was news
To know a man wore safety shoes
But nowaday, all who care
About their feet, will wear a pair.
A mashed toe hurts, and makes you feel
Like the kind of a guy who's called a "heel,"
For the thinking man, who really shows
Respect for his feet, protects his toes.
Write it in poetry, say it in prose
There's really no difference, everyone knows
The worth of protection, but just to be sure
"Rely on prevention, it's better than cure."

# Right off the Docket



**The trend of litigation on workmen's health and accident compensation is reflected in these briefs of the latest and most representative cases coming to trial in the intervals between issues. Familiarity with this trend is important to every industrialist.**

### Blow Results in Death from Pneumonia

The deceased employee while working in a lumber mill was engaged in piling boards. One of the boards, 1" x 10" by 10 feet fell off the piling machine and struck the employee between the second and third rib on the left side. He felt some pain but continued working some fifteen minutes until quitting time. There was testimony that the employee felt pain in his side, and was spitting blood when he reached home. He continued to work for some time, complaining of pain in his chest. Finally he was taken to a hospital where he was found to be suffering from lobar pneumonia. He died from this disease.

There was conflict on the question of whether there was a causal connection between the accident and the death from pneumonia. The Court held that from the evidence the probabilities were that the accident caused the disease, and an award for the death was made to the dependents of the deceased employee.
*McLaren vs Dep't of Labor and Industries* (Wash) 107 Pac 2nd 230 (Nov-1940)

### Independent Action for Damages Held Barred by Compensation Act

An action for injuries sustained by reason of the employer's deceit was brought by an employee. The employee claimed that the employer misrepresented to him the nature of carbon tetrachloride, which substance the employee used in his work. The employer stated the substance was harmless whereas in reality it was a highly dangerous fluid and its use resulted in injury to the employee.

This action for damage was dismissed on the ground that the Court had no jurisdiction of it. The Court stated that when the legislature passed the California Compensation Act it vested in the Industrial Commission exclusive jurisdiction over matters of compensation for any injury arising out of employment, irrespective of the manner in which it might occur. The employee to receive compensation for his injuries would have to proceed under the compensation act, and not by way of an independent action at law for damages. *Buttner vs American Bell Telephone Co. et al* (California) 107 Pac 2nd 439 (Nov-1940)

### Failure of Previously Diseased Heart Due to Exertion.

In the course of his work, the employee supported a heavy gear on his shoulder for about five minutes. He felt ill thereafter, complaining of pains in his side, and dizziness. A couple of days later he collapsed while at work, was taken to a hospital, and died. An autopsy revealed the cause of his death to be a thrombus, or blood clot, which shut off the blood from the muscles of one side of the heart. The autopsy also revealed that the employee had been suffering for some time from harden-

**JOHNSON ANKLE 'ACTION RUBBER LADDER SHOES**

***prevent accidents***

★ These shoes are endorsed by insurance companies and safety engineers everywhere.

**$1.80 per pair for straight ladders. A trial order will prove their many merits.**

**JOHNSON LADDER SHOE CO. Eau Claire, Wis.**

ing of the arteries, involving the arteries of the heart.

The Court made an award, holding, that an injury to or death of a workman as the result of shock, strain or exertion, which he is then unable to endure in his condition of health, during course of his employment, is compensable under Workmen's Compnsation Act. The Court held further that the injury or death is compensable regardless of the interval of time between the shock or exertion and the resulting injury or death.
*Barnes vs Dep't of Labor and Industries (Wash)* 106 Pac 2nd 1069 (Nov-1940)

**Inhalation of Poisonous Gas Causes Tuberculosis**

The claimant while cleaning out an oil tank, inhaled poisonous gas. Shortly thereafter he contracted in succession pneumonia and tuberculosis. The Court held that the injuries sustained by the employee were compensable. It said that the evidence justified a conclusion that the pneumonia was not an independent intervening agency or disease which broke the chain of causation between injury sustained by claimant who inhaled poisonous gas, and subsequent tubercular condition of claimant, and that the pneumonia and tuberculosis were each a naturally resulting link in chain of causation set in force by inhalation of the gas which irritated and inflamed the claimant's lungs.
*Traders & General Ins. Co. vs Wright* (Texas) 144 S.W. 2nd 626 (Oct-1940)

**Strain of Lifting Causes Brain Stroke**

Using a pneumatic drill while working on a highway, the employee was forced to exert himself to lift the drill when it became stuck in the material on which he was working. The strain of lifting the drill ruptured a blood vessel in the employee's brain, causing a stroke and resulting in his death. The Court held this to be a personal injury by "accident," though the employee was doing work he expected to do in manner contemplated, and there was no fall, slip, or stumble on his part or breakdown of machinery operated by him.
*Pinson vs Minidoka Highway District* (Idaho) 106 Pac 2nd 1020 (Oct-1940)

**Gas and Fumes from Electric Welding Result in Compensable Injury**

The employee, a mechanic, was disabled as a result of a diseased condition of his lungs caused by inhaling gas and fumes given off when he was engaged in electric welding a tank in a manhole beneath the street.

The Court made an award. It held, that disability to an employee caused by a disease which results from unusual, sudden, and unexpected inhalation of gas or fumes, while performing the duties of his employment, where the disease causing the injury is not the natural result of the existence of conditions necessarily incident to the work being performed, is the result of an injury by accident, and is compensable.
*Lumbermen's Mutual Casualty Co. vs Lynch* (Georgia) 11 S.E. 2nd 699 (Nov-1940)

**Digested and compiled by**
**HILTON E. ROBERTS**
***Member of the Ohio and New York Bar***

# *Health Activities* PAY OUT

AS A result of a survey of 1,945,000 employees, the National Association of Manufacturers' Committee on Healthful Working Conditions has reported that expenditures for medical supervision is financially profitable.

H. C. Beaver, Chairman of the Committee on Healthful Working Conditions and President of Worthington Pump and Machinery Corp., reviews the report as follows:

"The keynote of the Committee's activities is indicated in the slogan, 'Man-Power is the Heart of American Defense'. With modern military techniques the 17 men in industry (behind the lines) necessary to maintain 1 man in combat has emphasized the Committee's program for industrial health.

"Though the Committee on Healthful Working Conditions was established by the Association three years ago, with a view to promoting good working conditions, particularly in the smaller sized companies which employ the great bulk (62%) of American factory workers, the present defense effort has highlighted its activities. The shortage of skilled workmen is a specific example of the necessity of maintaining the continuous efficiency of each already trained worker through prevention of ill health and injury and provision of good factory lighting, heating, ventilating, and sanitation.

***Firm saves $4,006 following installation of health program.***

**Clinics**

"At its educational meetings, termed 'Clinics on Health in Industry', over 1200 operating executives in all types of industry have conferred with industrial hygienists and industrial health specialists under the Association's auspices during 1940. These 'Clinics' served a dual purpose, in that, in addition to demonstrating the latest industrial health techniques to factory managers, they have put the scientific recommendations of experts on a still more practical level. These 'Clinics on Industrial Health' were held in Muskegon, Michigan, Rochester, New York, Wilmington, Delaware Youngstown, Ohio, and Evansville, Indiana, and have made a specific contribution to the nation's industrial defense efficiency.

**1,945,000 Employees Surveyed**

"A survey to compile the actual status of health work during 1940, which the Association has conducted through its Committee, covered 1,945,000 employees in all types of industry in 47 states. As a result of this survey, now being tabulated and which will be reported, it was learned that those

companies installing and maintaining health programs have reduced occupational disease and injury by 47%, and that the number of absences from work have been reduced 28%. Both these reductions are believed to be indicative of the definite contribution that good industrial health and good working conditions are making toward national defense.

**$23,180,000 Spent**

"The preliminary results of the survey also indicates that within the past 12 months alone over 2,600 specific improvements have been put into operation for the control of fatigue and maintenance of good employee health. Typical examples of such improvements are the provision for employee hospital insurance, services of a registered nurse in the plants, and exhaust ventilation for dust, fumes, and gas control. This largest and most comprehensive survey on the progress of industry in the field of healthful working conditions also reveals that during the past 12 months the portion of industry which replied to the questionnaire spent over $23,180,000 on the operation of health programs in their plants.

"Following the installation of a health program costing a total of $6,445 a year it was found that the typical company employing 500 employees saved $10,451, leaving a net savings to the company of $4,006. In addition to this saving, the employees, because of their fewer absences, received $5,040 more annually in pay.

"Thus the operation of a health program in the smaller sized companies, in addition to its humanitarian value, makes an actual financial contribution to the welfare of both the men and the company. The promotion of such programs in the smaller sized companies is an integral portion of the Committee's work.

"The progress that is being made in the maintenance of employee health has resulted in considerable interest on the part of governmental, medical, and health agencies. The situation that arose during 1917-18 during the country's last major expansion of industries will not be repeated. During that time the great demand for more and more production was all too frequently handicapped because there was not available the present technical knowledge for maintaining the maximum health and safety of the individual employee.

"Through the 'Clinics' and other educational methods of the N. A. M. Committee, as well as efforts of other groups interested in industrial health, governing procedures and equipment seeking to assure the best possible health of employees are being incorporated almost invariably at the very beginning of any plans for plant and production expansion.

## Small Mines Accident Cost

*(Continued from page 12)*

of the total, cost was $6,602 for compensation and $5,216 for medical. Then leg, arm, hand, and head in point of frequency. However, from the severity angle, head injuries which were in sixth place in frequency were charged with

*LOCATION OF INJURY*

| | Cases | | Medical | | Compensation | | Total C. & M. | | Days Lost | | Months Awarded | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | Amt. | % | Amt. | % | Amt. | % | No. | % | No. | % |
| Eye | 317 | 20.4 | 5216 | 11.7 | 6602 | 5.1 | 11818 | 6.8 | 661 | 4.2 | 60 | 1.5 |
| Head | 92 | 5.9 | 2298 | 5.2 | 32408 | 24.9 | 34706 | 19.9 | 297 | 1.9 | 1332 | 28.6 |
| Back | 75 | 4.8 | 5442 | 12.3 | 13081 | 10.1 | 18523 | 10.6 | 2352 | 15.1 | 1457 | 31.2 |
| Trunk | 69 | 4.5 | 2824 | 6.4 | 3343 | 2.6 | 6167 | 3.5 | 1305 | 8.4 | 288 | 6.2 |
| Arm | 149 | 9.6 | 6187 | 13.9 | 11779 | 9.1 | 17966 | 10.3 | 1266 | 8.1 | 27 | .6 |
| Hand | 118 | 7.6 | 2908 | 6.6 | 3866 | 2.9 | 6774 | 3.9 | 1029 | 6.6 | 29 | .6 |
| Finger | 369 | 23.8 | 8412 | 18.9 | 13878 | 10.7 | 22290 | 12.7 | 2725 | 17.5 | 127 | 2.7 |
| Leg | 167 | 10.8 | 5269 | 11.9 | 9092 | 6.9 | 14361 | 8.2 | 2621 | 16.8 | 39 | .8 |
| Foot | 82 | 5.3 | 1767 | 3.9 | 2744 | 2.1 | 4511 | 2.6 | 1099 | 7.1 | — | — |
| Toe | 46 | 2.9 | 769 | 1.7 | 1794 | 1.4 | 2563 | 1.5 | 573 | 3.7 | 7 | .2 |
| N.O.C. | 68 | 4.4 | 3332 | 7.5 | 31635 | 24.2 | 34967 | 20.0 | 1651 | 10.6 | 1289 | 27.6 |
| Totals | 1552 | 100.0 | $44424 | 100.0 | $130222 | 100.0 | $174646 | 100.0 | 15579 | 100.0 | 4664 | 100.0 |

In this last chart injuries to fingers come first with a total of 369 at a cost of $22,290 for compensation and medical.

$34,706, and puts them in first place in cost. Fingers ran second and back injuries third in point of cost.

**Eye toll**

When we consider that 317 of a total of 1552 injuries were to the eyes, it can be appreciated that this serious problem requires immediate attention. It's a certainty that we can't continue to have 20% of our injuries to this most valuable part of the human anatomy without losing more eyes than we are at present. Here is an excellent example of needless injury. We all realize that underground conditions vary but there are many places where goggles can and should be used.

Personally, I feel that practically every one of these can be stopped by the use of proper equipment. As far as surface work is concerned, we find men doing all kinds of hazardous shop work, such as exposing their eyes to flying particles, or light from welding arcs, etc. In many instances no protection equipment is furnished and in others it is but the supervision necessary to enforce the use is lacking.

**Head Injuries**

Another good example of lack of use of protective equipment is shown by the 92 head injuries at a total cost of $34,706. $350 spent for hats would have prevented most of these.

From the employee's side of the picture, there were 15,579 shifts lost. If a figure of $5.00 per shift is estimated, they were out of pocket $27,264 which is the difference between the actual wage they would have received and the compensation allowed at 65%.

The figures presented give cold facts about the high cost of accidents. Small investments in properly designed and reliable protective equipment will pay considerable return.


Morton Salt Co. Chicago, Ill.

WORKERS WHO *Sweat* NEED *Salt*

• USE MORTON'S SALT TABLETS •

# New
# IN TH

GUARD THOSE EYES—An improved eye shield for use in gas welding, cutting and blow-torch operations, is announced by Jackson Products Company, Detroit, Michigan. This new eye shield is a cover-

all shield with enlarged opaque fiber side pieces. It is light in weight and has non-fogging features.

**WRITE THE EDITOR FOR FURTHER DETAILS**

FOR PERSPIRING HANDS—The Milburn Company, Detroit, Michigan, announce their new Ply #9, developed for manufacturers of high precision bearings and other aeroplane parts where perspiration of the hands is injurious to both workers and products. Ply #9 takes the form of a water-like colorless solution in which the worker dips his hands, permitting the moisture to dry; in the drying process an invisible protective film is formed.

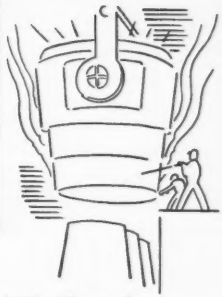
NEW SALES MANAGER FOR MELFLEX—L. E. Warford, President of the Melflex Products Company, Akron, Ohio announces the appointment of W. C. Brooks as sales manager. Mr. Brooks was formerly with the B. F. Goodrich Company in their Pacific Coast territory. As a result of this move the Company plans to extend its markets for Melflex Safety Flooring.

**WRITE THE EDITOR FOR FURTHER DETAILS**

PROTECTION AGAINST METAL FUMES—Mine Safety Appliances

Company, Pittsburgh, Pa., announces a U. S. Bureau of Mines approved

# New Ideas THE FIELD



Respirator as a protection for workers against metal fumes. Among the features of this product are aluminum filter containers, all rubber facepiece and U. S. Army-type exhalation valve.

**WRITE THE EDITOR FOR FURTHER DETAILS**

UNIT HEATER—Many innovations have been made in the line of steam unit heaters manufactured by Autovent Fan & Blower Company, Chicago, Illinois. The assembly items are die formed and vanes are individually adjustable for accurate heat direction to working areas. The coils are tested at 500 lbs. hydrostatic pressure and provide efficient heating at any steam pressure from 2 to 150 lbs. gauge.

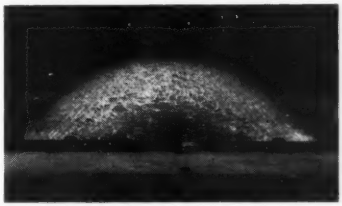
**WRITE THE EDITOR FOR FURTHER DETAILS**

FLEXIBLE FLUORESCENT LIGHTS—The Fostoria Pressed Steel Corporation, Fostoria, Ohio has available fluorescent fixtures mounted on flexible arms that can be adjusted to fit the individual lighting problem. The unit has been developed with an assortment of bases and clamps, permitting attachment to various equipment. Many sizes can be obtained.

**WRITE THE EDITOR FOR FURTHER DETAILS**

"NON-SPARK" SAFETY SHOES—Now available are non-spark safety shoes for use in powder plants and oil fields. These are put together with brass nails.

NEW SAFETY GLASS—Flexseal is the name of a new safety glass developed by the Pittsburgh Plate Glass Company. In effect, Flexseal is a plastic window, on both sides of which is "floated" a light of glass.



This product should find many industrial applications. This laminated glass can be fastened mechanically to other materials and form an air-tight seal.

**WRITE THE EDITOR FOR FURTHER DETAILS**

PROTECTIVE WELDING HELMET—Glass that can be removed and inserted instantly and a headband that may be adjusted on the head without removing the gloves are features of the new welding helmet manufactured by the Boyer Campbell Company, Detroit, Michigan. A spring mechanism allows for rigid control and easy adjustment.

**WRITE THE EDITOR FOR FURTHER DETAILS**

FLOOR DRESSING—Truscon Laboratories, Detroit, Michigan, announce

a floor dressing which makes it possible to dye a cement floor. This dressing is applied over the top of a dyed cement floor and requires no polishing or buffing. Because the material contains no wax it has slip-proof tendencies.

**WRITE THE EDITOR FOR FURTHER DETAILS**

HIGH SHOCK-RESISTING SAFETY LENSES—An interesting new development in the safety field is the Tulca Safety Goggle Lens developed by the Univis Lens Company, Dayton, Ohio. They are made of special non-shattering material and are less than half the weight of a tempered glass lens of equal dimensions and thickness. The manufacturer claims that the processing of Tulca lenses does not affect their optical qualities or are to be confused with old type plastic or laminated safety lenses, since they are produced by special processing.

***Tulca Lens shown at right unaffected by flying particles of hot metal after 84 hours service.***

In a recent flash welding experiment conducted by a leading manufacturing plant, Tulca lenses were found to be still serviceable after 84 hours of use. A regulation test showed that the surface of the lenses is 20 times more resistant to grit and hot metallic particles driven from an emery wheel than tempered glass lenses. Molten metal splashed on the lenses and flying particles of hot metal and sparks made no impression. A Polariscope reading showed almost negligible strain pattern. Light in weight, the Tulca lenses are available in curved or flat style and will fit safety goggles and spectacles of any style or shape.

**WRITE THE EDITOR FOR FURTHER DETAILS**

## Codes for the Prevention of Industrial Diseases

The industrial speed-up involves the extensive use of many materials that are dangerous to health. Many more of these are being used, and used much more extensively than under ordinary conditions. And, again, they will be used by many firms and by personnel unaccustomed to handling these materials. The American Standards Association has a committee working to determine the danger limits for each toxic material. This committee contains more well-known authorities on the subject than have ever been brought together before.

The technical work on codes for the following substances has been completed and the work is ready for official approval and promulgation: carbon monoxide, benzene, hydrogen sulfide, and carbon disulfide.

Work is actively under way on codes for the following additional substances: Carbon tetrachloride, Chromic acid, Formaldehyde, Hydrofluoric acid, Lead, Mercury, Methanol, Nitrogen oxides, Tetrachlor etane, Tetrachlor ethylene, Trichlor ethylene, Toluol.

Preliminary drafts have already been prepared for nitrogen oxides and tetrachlor ethane.

# This month in *Washington*

By W. T. CAMERON, Chief Safety Adviser, Division of Labor Standards, U. S. Department of Labor

# What Makes a Good Safety Record

SINCE 1926 there has been a gradual but steady decline in the industrial accident rate. In the 14-year period from 1926 to 1939 this reduction has amounted to 69% for frequency of accidents and a flat 50% reduction in the severity of accidents. Although, when finally tabulated, 1940 may show an increase over 1939, and thus break the downward trend; nevertheless, industry can point with pride to a steady plugging job well done. In the main, the large industries of the country have carried the burden of this reduction and have turned out some outstanding safety records.

**Behind the scenes**

It is interesting to look behind the scenes of any good safety record and see what makes it click. Almost every time you'll find three important things. First, a *personality.* Somewhere in the organization there is a man who makes safety his full-time job. By whatever name—safety engineer, safety consultant, safety director, or just "safety man"—one always finds a safety *crusader,* a man who not only knows "how" but who has the ability to sell the "safety idea" to others.

When I think of "selling ideas" I think of what J. L. Rosenstein, a consulting psychologist, has to say in "The Human Side of Safety." "When you try to teach a man anything," says Dr. Rosenstein "you know that it isn't what you say that counts. You know that the important thing is what he *gets.* You know that when he understands an idea or a bit of instruction which

you pass along to him, when he appreciates its value, when he knows what it's all about, he makes it *his* idea. When it is his idea, your job of teaching is ended. He has the idea, he can use it, and he knows when and how to use it."

Second behind that good safety record is executive and administrative interest. The management has got to *want* safety. That want has got to be felt by all the members of the organization all the time and not just when the safety director puts on some pressure to have the management put up a good front. Whenever safety men get together you will find someone laboring the subject, "How to keep the management sold on safety." You may have to keep the management informed but you don't get a real safety program until management adopts the philosophy that places the safety, health and welfare first in every decision affecting the operation, or the activity in which the company is engaged and keeps prodding you to get the safety job done.

**Balanced Program**

And third, you will always find behind the scenes of that good safety record a *balanced* program of engineering, education and enforcement. And you will always find them in *that* order. Management does an engineering job which may cost far more than any other phase of the safety program, but in so doing indicates its sincerity in the program and paves the way for its appeal to workers to share their responsibility by working safely in a safe work place.

By safety education I mean *education* and not ballyhoo. Charles A. Miller, Safety Engineer of the Texas Company, said the other evening before the Washington Safety Society that safety education must be personalized—that you wouldn't expect a Number 9 shoe to fit all the workers, and by the same token you cannot expect one educational appeal to get your message across to all types of workers, young and old, married and single.

**Fundamentals**

There are three fundamentals of any enforcement program for safety. First, the "victims" must be given a hand in developing the rules. Instead of being laid down arbitrarily by the safety director, the rules ought to be worked out by the safety committee and discussed with the workers by their representatives on the committee. The discipline which is to be meted out for violation of safety rules is carefully agreed upon beforehand. A graded list of penalties is laid out and this, too, is discussed with, and agreed to, by the "victims." Dr. Ralph Lee of the General Motors Corporation says that accidents due to human failure have two causes —"One, doing something we didn't know was wrong or dangerous or unsafe, and two, doing the things we knew were wrong but thought we could 'get away with.'"

Through rules and discipline we implant in the minds of all affected by the rule the thought, "Perhaps I could get away with it, but it isn't worth the chance." The third principle of good discipline is to have all supervisors show that they mean business by enforcing the rules and finally, that the rules be enforced impartially and rationally.

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## Drinking Water Facilities

*(Continued from page 16)*

drinking cup," Doctor Jones declared recently, in discussing industrial sanitation, "should be prohibited. When individual drinking cups are supplied, a container should be provided for unused cups as well as a receptacle for disposal of used cups."

### Use of Paper Cups

Besides being accepted for their sanitary character, paper cups are regarded as an economy by many users. It is estimated that their cost is only a fraction of that which the average employer now pays for absenteeism due to respiratory diseases. If personal glasses are kept in lockers or desks, time must be consumed in getting the glass, taking it to the dispenser which is usually located near the water tap, and returning it to locker or desk.

Rinsing is another important factor. It is, health officers have determined, of little or no value in disposing of germs that lurk along the rim of a glass. Only glasses that have been subjected to heat or chemicals, for an accepted period, are considered safe and the equipment for such a process is, of course, out of the question for factories and offices. Nevertheless, most people, either for some vaguely-felt aesthetic motive, or because of an erroneous belief that a swish under cold water will make it "clean," will almost invariably rinse a glass that other people have used before putting it to their own lips. Such rinsing and overdraught wastes water, an important item where cooled or spring water is used.

Paper cups, on the other hand, are designed to hold an average sized drink so that there is no waste of water. In drying rooms of tanneries, lard rooms and near scrapple kettles of packing plants, and in innumerable other industries where workers experience intense heat, salt tablets are provided and workers are required to take them frequently to replace the salt lost through perspiration. To facilitate

the taking of the tablets, water is used. In such plants, the advantages of paper are intensified.

When bubblers are used, a goose neck attachment will make the bubbler adaptable for paper cup service. A dispenser of paper cups is conveniently located beside the bubbler, along with a receptacle to hold the discarded cups. This prevents the possibility of contagion when workers touch the guard or bubble top with their mouths.

Faces are not spattered with water which, in the case of female employees, means ruined make-up, and time out for facial repairs. Furthermore, drinking from a cup, it has been noted, is the natural way to drink, requiring no stooping over. Care should be exercised to avoid pollution of the entire drinking water system resulting from back siphonage—a hazard not uncommon to improperly designed bubblers. This danger, as well as the expense of frequent inspection and maintenance necessary to safe operation of bubbler-type fountains, is eliminated by the use of refrigerated coolers with paper cups.

**Sanitation Important**

The advisability of guarding against common infections, through the use of sanitary paper service, is becoming more widely recognized. Last year a bill was introduced into the California Legislature which would require "Every employer who furnishes drinking water to his employees, or who exposes drinking water for their consumption" to provide individual drinking cups wherever an approved drinking fountain is not supplied. More and more factories have installed paper cup dispensers and on construction jobs the need for individual drinking cups, to supplant the old-fashioned dipper, is being increasingly noted. Today, more than ever, the wise employer will realize it's "good management" to insure his workers against common, but expensive, diseases, by investing in sanitary drinking facilities.

## Dust Control in Ceramic Industry

*(Continued from page 9)*

paper bags. These are dumped into the bucket of the skip hoist which feeds the mixer. Generally, a suction is attached at the top of the hoist to remove the dust formed when the bucket is loaded and when the contents are dumped into the mixer. If the suction is sufficient, the greatest part of the hazard in this procedure is eliminated. Thus far, the dry mix process has been introduced only where the product is produced by the dry press method.

**Forming the Ware**

After the body has been compounded and mixed with water, other preparations must be completed before the ware can be formed. In making jiggered ware, it must be pugged. Since the body is wetted completely at all times, there is little hazard. In casting, slip from the cistern is mixed with electrolyte, or filter-press cake is mixed with water and electrolyte to produce a proper specific gravity before the ware is formed in

plaster moulds. The removal of the water from the slip leaves a plastic mass of about even thickness on the sides of the mould. Plastic body, which is produced by pugging the filter-press cake, is used for pressing, jiggering, and throwing.

**Forming Needs Ventilation**

When ware is made by turning a dried blank on a lathe, a part of the dried body must be removed to form the right contour of the piece. This procedure is followed in the electrical porcelain field. Sometimes the piece may be drilled. Unless the equipment is ventilated, a hazardous dust will be formed. It is recommended that the equipment used be ventilated so that all of the dust will be removed. This can be done best, in most instances, by a downward suction. The cuttings can be collected and returned to the cycle. In one plant, the writer has seen a product formed from a dried blank where 45% of the blank is removed in forming the piece. It pays to return this excess material to the cycle.

Some turning is done in the leather-hard condition. There, a careless workman may allow the turnings to fall on the floor and walk over them, kicking them into the atmosphere when they are dried. These turnings should be collected in containers and removed often.

**Dust Tight Equipment**

Dry pressed ware is produced in the floor and wall tile and electrical porcelain industries. Electrical porcelain, electrical refractories, and whiteware refractories are pressed with 15% to 18% moisture. Floor and wall tile have 5% to 8% moisture when formed. The body with 15% to 18% moisture furnishes no hazard after it is produced. Two procedures are generally used. The older requires wetting broken filter-press cakes with the proper amount of water and grinding them through a disintegrator or pulverizer. This machine throws the fine particles into a bin or some other arrangement for collection. It is recommended that the equipment be dust tight and that a suction be maintained so that there can be no outward movement of air into rooms where men work. Dust that escapes through cracks in the equipment dries very quickly and permeates the room causing a definite hazard.

After the body is prepared and stored in carts or pins, there is little chance of forming dust from this body as long as the usual care is followed. The other procedure is dry mixing. There the wetted body is dumped from the mixer into a micro-pulverizer or disintegrator and a method similar to that described above is followed in collecting the ground body. The same care should be exercised as previously described.

**Moulding**

Floor and wall tile are pressed from a body mix having the lower water content. The filter-press cakes are ground or disintegrated as is done with other dry-press ware. Here much more care must be used in retaining the dust in the equipment provided.

*(To be concluded in March issue)*

# Industrial Nurses Meet in Wisconsin

Industrial nurses from Wisconsin and neighboring states will attend a symposium at the Hotel Wisconsin, Milwaukee, February 20, 21, and 22, 1941. The medical profession and industrial management are also invited. The following is a partial program as arranged by Paul A. Brehm, M.D., Supervisor, Industrial Hygiene Unit, State Board of Health, Madison.

*Thursday Morning.* February 20, 1941

9:00-10:00 A.M.
Registration (no fee).
10:00 A.M.
Address of Welcome.
Mayor Carl F. Zeidler, Milwaukee
10:15 A.M.
"Relationship of the Nurse in Industry to the Physician."
Dr. Stanley J. Seeger, Milwaukee.
10:40 A.M.
"The Responsibility of the Industrial Nurse in the Efficient Administration of a Compensation Law."
B. E. Kuechle, Vice-President Employers Mutual Liability Insurance Company, Wausau, Wis.
11:00 A.M.
"The Responsibility of the Nursing Profession in Industrial Hygiene."
J. J. Bloomfield, Sanitary Engineer, United States Public Health Service, Washington, D.C.
Discussion—30 minutes
12:30 P.M.—Luncheon, Hotel Wisconsin

*Thursday Afternoon*

Presiding Chairman—Harry A. Nelson, Director of Workmen's Compensation, Industrial Commission, Madison.
2:00 P.M.
PANEL DISCUSSION
"After the Injury—What?"
3:30 P.M.
"Dental Program in Industry."
Dr. Ernest W. Miller, the Milwaukee Electric Railway and Light Co., Milwaukee.
4:00 P.M.
DISCUSSION—30 minutes
6:30 P.M.
Dinner—Dr. C. Copeland Smith, National Association of Manufacturers, New York, guest speaker.

*Friday Morning.* February 21, 1941

9:00 A.M.
PLANT VISITATION
The Milwaukee Electric Railway and Light Company, Curative Workshop, Globe-Union Manufacturing Company.

*Friday Afternoon*

Presiding Chairman—Dr. Wm. S. Middleton, Dean, the Medical School, Univ. of Wis., Madison.
1:30 P.M.
Mr. Harry Guilbert, Director, Bureau of Safety and Compensation, Pullman Co., Chicago, Ill.
"The National Defense Program and the Industrial Worker."

Complete details on program and convention facilities can be gotten by writing to Dr. Grehm at Wisconsin.

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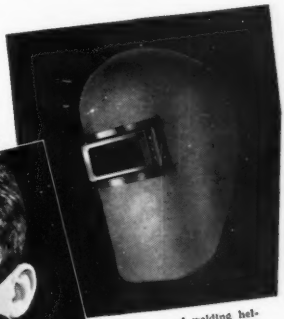

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It buffers the mild alkali in the soap content and goes on to leave the hands softened and replenished with a emollient natural oil. LAN-O-KLEEN though mild in action has all or more than the cleansing efficiency of any soap you are now using. If that sounds exaggerated, we can only say "Let us send you a trial quantity—and you try it for yourself." We'll send you enough (dispenser and Lan-O-Kleen) to test out in a department for 2 to 3 weeks.

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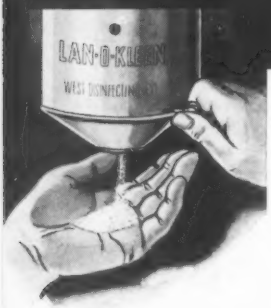


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